WHAT IS CLAIMED IS:

1. An information frame comprised of a plurality of consecutive multiplex frames each having a given length, each multiplex frame comprised of a header and a succeeding radio link protocol (RLP) frame, said RLP frame including transmission data, wherein at least one of the multiplex frames is comprised of a plurality of sub-multiplex frames, and each sub-multiplex frame is comprised of a header including an RLP service identifier field and a length indication field for indicating a length of the transmission data, and a data block associated with the succeeding RLP frame.

2. The information frame as claimed in claim 1, wherein the length indication field is comprised of a length indicator for indicating whether there exists one succeeding RLP data block, and a length field for indicating a length of the succeeding RLP data block.

3. An information frame comprised of a plurality of consecutive multiplex frames each having a given length, each multiplex frame being comprised of a header and a succeeding radio link protocol (RLP) frame, said RLP frame including transmission data, wherein the multiplex frames are each comprised of a header including an RLP service identifier field and a length indication field for indicating a length of the transmission data, and a data block associated to the succeeding RLP frame.

4. The information frame as claimed in claim 3, wherein the length indication field is comprised of a length indicator for indicating whether there exists one succeeding RLP data block, and a reserved field for indicating a length of the succeeding RLP data block.

5. A method for transmitting frames in a mobile communication system which transmits frames for several services, the method comprising the steps of:

creating a multiplex frame of a given length including at least one RLP frame determined according to a service priority, the RLP frame including a header comprised of a service identifier indicating a service of the RLP frame and a length indicator indicating a length of the RLP frame; and

assembling a plurality of the consecutive multiplex frames into an information frame of a predetermined length and transmitting the information frame.

6. A data transmission device in a mobile communication system comprising:

a plurality of RLP processors each for processing unique service data and generating an RLP frame of a predetermined length;

a multiplexing controller for determining a length of the RLP frame generated from the RLP processors, and assembling a multiplex frame having a first length including at least one RLP frame generated from the RLP processors, the RLP frame including a header comprised of a service identifier indicating a service of the RLP frame and a length indicator indicating a length of the RLP frame; and

a physical layer processor for assembling a plurality of the consecutive multiplex frames into an information frame of a second length and transmitting the information frame.

7. A method for receiving frames in a mobile communication system which receives an information frame comprised of a plurality of consecutive multiplex frames, each multiplex frame including at least one RLP frame, at the head of which a header is attached which is comprised of a service identifier indicating a service of the RLP frame and a length indicator indicating a length of the RLP frame, the method comprising the

steps of:

demultiplexing the multiplex frame included in the received information frame; and

separating at least one RLP frame included in the demultiplexed multiplex frame according to the services using the length indicator of the header, and outputting the separated RLP frame to the corresponding service for processing.

8. A device for receiving frames in a mobile communication system which receives an information frame comprised of a plurality of consecutive multiplex frames, said each multiplex frame including at least one RLP frame, at the head of which a header is attached which is comprised of a service identifier indicating a service of the RLP frame and a length indicator indicating a length of the RLP frame, the device comprising:

a demultiplexing controller for separating at least one RLP frame included in the multiplex frame in the received information frame according to the services using the length indicator of the header; and

a plurality of RLP processors for performing a corresponding service on the separated RLP frame.